

IN THE CLAIMS:

1 1. (Currently Amended): A method of pro-actively refreshing credentials by an entity
2 that maintains credentials, the method comprising ~~the steps of:~~

3 a) storing in a memory, a profile collection having at least one credential
4 profile, each credential profile including a credential and related
5 information; and

6 b) ~~causing the stored credential in the credential profile to be examined in~~
7 ~~accordance with a refresh policy; for each credential profile in the profile~~
8 ~~collection:~~

9 e)i) in accordance with at least one criterion of a refresh policy, making
10 a determination, from that credential profile's related information,
11 of whether that ~~comparing at least one criterion of the refresh~~
12 ~~policy with the related information to determine if the credential~~
13 ~~needs to be refreshed;~~

14 d)ii) replacing the stored credential with a new credential in the
15 credential profile if the determination is that the stored credential
16 does need ~~needs~~ to be refreshed; and

17 e)iii) updating the related information of the new credential in the
18 credential profile; ~~and~~

19 ~~f) repeating the steps of c) e) on a next credential profile in the profile~~
20 ~~collection.~~

1 2. (Currently Amended): The method of claim 1, wherein ~~before step a)~~, the method
2 further comprises ~~the steps of~~ creating the profile collection by, for each of at least one
3 needed credential, ~~;~~
4 ~~determining if whether~~ the profile collection includes a credential profile for a that
5 needed credential, ~~exists;~~ and, if not, then:
6 creating an empty credential profile;
7 gathering ~~the~~ that needed credential;
8 storing ~~the~~ that needed credential in the credential profile;
9 obtaining related information including resource constraints on ~~the~~ that needed
10 credential; ~~and~~
11 storing the information in the credential profile; ~~and~~
12 ~~repeating the steps if another credential profile needs to be created.~~

1 3. (Currently Amended): The method of claim 2, wherein ~~the step of obtaining the~~
2 resource constraints ~~is performed~~ are obtained by manual entry of a user.

1 4. (Currently Amended): The method of claim 2, wherein the ~~step of obtaining~~ resource
2 constraints ~~is~~are deduced through access attempts.

1 5. (Currently Amended): The method of claim 2, wherein the ~~step of obtaining~~ resource
2 constraints ~~is~~are obtained from a directory.

1 6. (Currently Amended): The method of claim 2, wherein the ~~step of obtaining~~ resource
2 constraints are~~is~~ obtained from a resource server.

1 7. (Original): The method of claim 2, wherein the stored credential includes a public
2 key identity credential.

1 8. (Original): The method of claim 2, wherein the stored credential includes a group
2 membership credential.

1 9. (Original): The method of claim 2, wherein the stored credential includes a group
2 non-membership credential.

1 10. (Original): The method of claim 2, wherein the stored credential includes a non-
2 revocation credential.

1 11. (Original): The method of claim 2, wherein the stored resource constraints include a
2 recency requirement.

1 12. (Original): The method of claim 2, wherein the stored resource constraints include a
2 trust level.

1 13. (Original): The method of claim 2, wherein the stored resource constraints include a
2 maximum credential chain length.

1 14. (Currently Amended): The method of claim 1, wherein the related information
2 includes ~~storing information on~~ a credential identifier.

1 15. (Currently Amended): The method of claim 1, wherein the related information
2 includes ~~storing information on~~ when the credential was issued.

1 16. (Currently Amended): The method of claim 1, wherein the related information
2 includes ~~storing information on~~ when the credential was last used for a resource access.

1 17. (Currently Amended): The method of claim 1, wherein the related information
2 includes ~~storing~~ information on the resource on which ~~resource~~ the credential was last
3 used.

1 18. (Currently Amended): The method of claim 1, wherein at least one said criterion is
2 such that the method includes refreshing credentials that are older than a certain time
3 period.

1 19. (Currently Amended): The method of claim 1, wherein at least one said criterion is
2 such that the method includes refreshing credentials that were last used within a certain
3 time period.

1 20. (Currently Amended): The method of claim 1, wherein at least one said criterion is
2 such that the method includes refreshing credentials that are older than an associated
3 recency requirement.

1 21. (Currently Amended): The method of claim 1, wherein at least one said criterion is
2 such that the method includes refreshing credentials that are predicted to be used in a next
3 session.

22. (Currently Amended): A processor-executable-readable medium having instructions contained therein which when executed by a processor causes the processor to execute a method of pro-actively refreshing credentials by an entity that maintains credentials, the method comprising the steps of:

- a) storing in a memory, a profile collection having at least one credential profile, each credential profile including a credential and related information; and
- b) ~~causing the stored credential in the credential profile to be examined in accordance with a refresh policy; for each credential profile in the profile collection:~~
 - e)i) in accordance with at least one criterion of a refresh policy, making a determination, from that credential profile's related information, of whether that comparing at least one criterion of the refresh policy with the related information to determine if the credential needs to be refreshed;
 - d)ii) replacing the stored credential with a new credential in the credential profile if the determination is that the stored credential needs to be refreshed; and
 - e)iii) updating the related information of the new credential in the credential profile; ~~and~~

21 ~~f) — repeating the steps of c) — e) on a next credential profile in the profile~~
22 ~~collection.~~

1 23. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein ~~before step a)~~, the method further comprises creating the profile collection by,
3 for each of at least one needed credential, :
4 determining if whether the profile collection includes a credential profile for a that
5 needed credential, exists; and, if not, then
6 creating an empty credential profile;
7 gathering ~~the~~ that needed credential;
8 storing ~~the~~ that needed credential in the credential profile;
9 obtaining related information including resource constraints on ~~the~~ that needed
10 credential; and
11 storing the information in the credential profile; and
12 ~~repeating the steps if another credential profile needs to be created.~~

1 24. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the ~~step of obtaining~~ resource constraints ~~is performed~~ are obtained by manual
3 entry of a user.

1 25. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the ~~step of obtaining~~ resource constraints ~~is deduced~~ are obtained by deducing
3 them through access attempts.

1 26. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the ~~step of obtaining~~ resource constraints ~~are~~ is obtained from a directory.

1 27. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the ~~step of obtaining~~ resource constraints ~~is~~ are obtained from a resource server.

1 28. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored credential includes a public key identity credential.

1 29. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored credential includes a group membership credential.

1 30. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored credential includes a group non-membership credential.

1 31. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored credential includes a non-revocation credential.

1 32. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored resource constraints include a recency requirement.

1 33. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored resource constraints include a trust level.

1 34. (Currently Amended): The processor-~~executable~~-readable medium of claim 23,
2 wherein the stored resource constraints include a maximum credential chain length.

1 35. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein the related information includes ~~storing information on~~ a credential identifier.

1 36. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein the related information includes ~~storing~~ information on when the credential was
3 issued.

1 37. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein the related information includes ~~storing~~ information on when the credential was
3 last used for a resource access.

1 38. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein the related information includes ~~storing~~ information on the resource on which
3 ~~resource~~ the credential was last used.

1 39. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein at least one said criterion is such that the method includes refreshing credentials
3 that are older than a certain time period.

1 40. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein at least one said criterion is such that the method includes refreshing credentials
3 that were last used within a certain time period.

1 41. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein at least one said criterion is such that the method includes refreshing credentials
3 that are older than an associated recency requirement.

1 42. (Currently Amended): The processor-~~executable~~-readable medium of claim 22,
2 wherein at least one said criterion is such that the method includes refreshing credentials
3 that are predicted to be used in a next session.

1 43. (Original): A system for pro-actively refreshing credentials by an entity that
2 maintains credentials, the system comprising:
3 a memory to store a profile collection having at least one credential profile, each
4 credential profile including a credential and related information;
5 a circuit to read the credential profile;
6 a refresh policy stored in the memory to determine if the credential needs to be
7 refreshed using the related information, wherein the circuit replaces the stored
8 credential with a new credential in the credential profile if the stored credential
9 needs to be refreshed and the circuit updates the related information of the new
10 credential in the credential profile.

1 44. (Currently Amended): The system of claim 43, wherein ~~system further~~
2 ~~comprises~~the circuit is configured to:
3 ~~the circuit configured to determine, for each of at least one needed credential, whether if~~
4 the profile collection includes a credential profile for athat needed credential, ~~exist~~; and,
5 if not, then

6 ~~the circuit configured to~~ create an empty credential profile in the memory, ~~the~~
7 ~~circuit further configured to~~ gather ~~the~~ that needed credential; ~~and~~
8 store ~~the~~ that needed credential in the credential profile;;
9 ~~the circuit configured to~~ obtain related information including resource constraints
10 on ~~the~~ that needed credential, and
11 store the information in the credential profile.

1 45. (Original): The system as in claim 44, wherein the circuit is a processor.

1 46. (Currently Amended): The system of claim 44, wherein the resource constraints
2 areis obtained by manual entry of a user.

1 47. (Currently Amended): The system of claim 44, wherein the resource constraints is
2 are deduced through access attempts.

1 48. (Currently Amended): The system of claim 44, wherein the resource constraints
2 areis obtained from a directory.

1 49. (Currently Amended): The system of claim 44, wherein the resource constraints
2 areis obtained from a resource server.

1 50. (Original): The system of claim 44, wherein the stored credential includes a public
2 key identity credential.

1 51. (Original): The system of claim 44, wherein the stored credential includes a group
2 membership credential.

1 52. (Original): The system of claim 44, wherein the stored credential includes a group
2 non-membership credential.

1 53. (Original): The system of claim 44, wherein the stored credential includes a non-
2 revocation credential.

1 54. (Original): The system of claim 44, wherein the stored resource constraints include
2 a recency requirement.

1 55. (Original): The system of claim 44, wherein the stored resource constraints include
2 a trust level.

1 56. (Original): The system of claim 44, wherein the stored resource constraints include
2 a maximum credential chain length.

1 57. (Currently Amended): The system of claim 43, wherein the ~~stored~~related
2 information includes a credential identifier.

1 58. (Currently Amended): The system of claim 43, wherein the related ~~stored~~
2 information includes when the credential was issued.

1 59. (Currently Amended): The system of claim 43, wherein the related ~~stored~~
2 information includes when the credential was last used for a resource access.

1 60. (Currently Amended): The system of claim 43, wherein the related ~~stored~~
2 information includes on which resource the credential was last used.

1 61. (Original): The system of claim 43, wherein the refresh policy refreshes credentials
2 that are older than a certain time period.

1 62. (Original): The system of claim 43, wherein the refresh policy refreshes credentials
2 that were last used within a certain time period.

1 63. (Original): The system of claim 43, wherein the refresh policy refreshes credentials
2 that are older than an associated recency requirement.

- 1 64. (Original): The system of claim 43, wherein the refresh policy refreshes credentials
- 2 that are predicted to be used in a next session.